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United States Department of the Interior
Fish and Wildlife Service

Wildlife Leaflet 223

Chicago, Illinois

October 1942

NATURAL PLANTINGS FOR ATTRACTING WATERFOWL
TO MARSH AND OTHER WATER AREAS

Prepared in the Division of Wildlife Research

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REGULATION AGAINST BAITING

Waterfowl cannot legally be taken when attracted to fields, marshes, or other areas by corn, wheat, rye, oats, or other grains that were not or had not theretofore been planted there as an annual agricultural crop, but had been put out or planted manifestly to attract the birds for shooting. The present regulations, as proclaimed by the President under the Migratory Bird Treaty Act, do not permit the taking of these game birds by aid, directly, or indirectly, of grains or grain products or any other kind of food so put out that the birds are enticed thereby.

The Department does not construe the regulations, however, as applicable to natural wild vegetation already established on or in marsh or water areas or planted there when the normal growth is deficient in order to establish a stand of natural wild-duck foods. Such plantings are desirable as they grow through-out the year and provide game birds with natural foods. Waterfowl attracted by the wild plants herein listed may be taken during the prescribed open seasons without violating the present Federal regulation on baiting.

To aid in improving areas suitable for the establishment of permanent stands of marsh and aquatic vegetation attractive to ducks, this leaflet presents a brief discussion of three types of marsh and water areas and lists the principal species of wild plants best adapted to them. These types are: (1) Areas characterized by muddy, fluctuating water (as in the Mississippi Valley); (2) coastal marshes and marshland ponds; and (3) miscellaneous areas.

NOTE: This leaflet supersedes Wildlife Research and Management Leaflet BS-125, issued in January 1939, by the Bureau of Biological Survey under the Department of Agriculture.

AREAS CHARACTERIZED BY MUDDY, FLUCTUATING WATER

The flood plains of the Mississippi River from central Iowa and Illinois southward together with adjoining flood plains of the larger tributaries are an outstanding example of the type of area characterized by muddy water and fluctuating levels. Only in the older ox-bow lakes or other bodies of water somewhat removed from the main channel of the river do even the most adaptable species of aquatic plants have a chance to survive the combination of destructive water fluctuation, the scouring action of spring floods, extreme diminution of light by turbidity, and burial under blankets of silt.

The prospects of improving aquatic vegetation in situations of this kind are slight, but fortunately there are fair to excellent potentialities for developing good food resources on mud flats and marshy areas that are subject to shallow inundation in fall. Wild plants best suited to such places include the smartweeds, wild millet, and chufa. Seeds of smartweeds and wild millet and tubers of chufa should be sown in spring after flood waters have receded sufficiently. It may be desirable and practicable in some localities to build dikes, canals, or other structures to regulate the water flow and to insure proper submergence of vegetation in fall.

The following plants are best adapted for this type of area;

(a) For marshy flats and moist margins:

Wild millet (Echinochloa crusgalli).

Smartweeds (Polygonum)

Large-seed smartweed (P. pennsylvanicum).

Dotted smartweed (P. punctatum).

Ladysthumb (P. persicaria).

Nodding smartweed (P. lapathifolium).

Swamp smartweed (P. hydropiperoides).

Marsh smartweed (P. muhlbergii) -- suited to growth in shallow water but tolerates changing water levels.

Chufa (Cyperus esculentus).

(b) For permanent ponds and lakes:

Cocontail (Ceratophyllum demersum) -- likely to choke out other submerged plants, therefore not recommended except where the more desirable species will not grow.

Longleaf pondweed (Potamogeton americanus).

Duckweeds (Lemna minor and Spirodela polyrrhiza) -- suited to small ponds sheltered from wind and water movement.

Southern naiad (Najas guadalupensis).

In addition to these species the seeds and spikelets of tealgrass (Eragrostis hypnoides) and the red-rooted cyperus (Cyperus erythrorhizos) are known to be eaten in large quantities by pintails, teals, gadwalls, and ring-necked ducks in the White River flood lands of eastern Arkansas.

COASTAL MARSHES AND MARSHLAND PONDS

The opportunity for increasing natural food resources in coastal marshes and marshland ponds is usually rather limited unless the water supply can be improved by physical changes. In certain places much benefit follows the construction of dams, dikes, or levees to retain fresh water or to exclude excessively salty water. Ponds are needed in many places to compensate for those ruined by drainage in coastal mosquito-control operations. Where drainage can be arrested, new ponds suitable for the production of aquatic vegetation can be created by dike impoundments or by the digging or dynamiting of shallow excavations in marshland.

Fresh-water coastal ponds often support a considerable variety of aquatic plants, whereas definitely brackish waters have only a few species (often only one or two), exclusive of algae. The few brackish-water species, however, are generally valuable, often abundant, and usually are present wherever habitat conditions are favorable.

Only fresh or mildly brackish marshland is, in general, productive of good food resources; the more distinctly brackish type of marsh may have satisfactory vegetative growths in its ponds, but its emergent plants--cordgrasses (Spartina spp.), saltgrass. (Distichlis spicata), Needlerush (Juncus roemerianus), and others -- have little food value.

Plants best adapted for such situations include:

(a) For brackish ponds:

Wigeongrass (Ruppia maritima).
Sago pondweed (Potamogeton pectinatus) -- largely in the North.
Horned pondweed (Zannichellia palustris).
Dwarfed spikerush (Eleocharis parvula).

(b) For fresh or nearly fresh ponds and sluggish streams:

Sago pondweed (Potamogeton pectinatus) -- Largely in the North.
Pondweed (P. pusillus and P. foliosus).
Claspingleaf pondweed, or redhead-grass (P. bupleuroides).
Southern naiad (Najas guadalupensis)
Muskgrasses (Characeae)
Wild celery (Vallisneria spiralis) -- in water with sluggish currents.
Banana waterlilly (Nuphar mexicana) -- in the South; likely to choke out submerged plants.

(c) For mildly brackish marshes;

Saltmarsh bulrush (Scirpus robustus).
Common three-square (S. americanus).
Tidmarsh waterhemp (Acnida cannabina) -- along tidal channels.
Dotted smartweed (Polygonum punctatum).
Gulf-coast spikerush (Eleocharis cellulosa) -- in the South.

(d) For fresh or nearly fresh marshes:

Wild millet (Echinochloa crusgalli).

Common three-square (Scirpus americanus).

Smartweeds (Polygonum)

Dotted smartweed (P. punctatum).

Largeseed smartweed (P. pennsylvanicum).

Nodding smartweed (P. lapathifolium).

Waterpepper (P. hydropiper).

Wildrice (Zizania aquatica-- principally of value in the North and in parts of coastal South Carolina, requires soft, deep soil.

Square stem spikerush (Eleocharis quadrangulata)--mainly in the South

Jointed spikerush (E. equisetoides)--in the Gulf region.

MISCELLANEOUS AREAS

Coastal bays are important waterfowl habitats. Prevention or elimination of harmful pollution is within man's power, but storms, tides, shifting bottoms, plant diseases (as in eelgrass), and other factors that govern the presence or abundance of duck foods in these waters are beyond practical control.

Other areas vary in size from small ponds and lakes to large reservoirs and inland seas, and they may be acid, neutral, or alkaline. Since most plants are adapted to a particular group of environmental conditions, it would be futile to attempt a blanket recommendation of plants suitable for so great a complex of situations.

It is suggested that any person interested in availing himself of the Fish and Wildlife Service's recommendations on a specific waterfowl area request a copy of the printed questionnaire provided for this purpose and fill it out as completely as possible, giving particular care to reporting existing plants or submitting suitable specimens of them. The importance of submitting specimens can hardly be over-emphasized, since plants resident in one locality serve as indicators of other species suitable for trial and also because it is desirable to avoid unnecessary trouble and expense in introducing a species that is already abundantly represented.

SUPPLEMENTARY INFORMATION

A list of dealers in duck-food plants can be obtained from the Fish and Wildlife Service, Department of the Interior, Chicago, Illinois.

Additional information on duck-food plants is contained in the following publications, which can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., at the prices listed:

Food of Game Ducks in the United States and Canada, by A.C. Martin and F.M. Uhler, United States Department of Agriculture Technical Bulletin 634, 157 pages, illustrated. 1939. Price 40¢

Food Habits of North American Diving Ducks, by Clarence Cottam, United States Department of Agriculture Technical Bulletin 643, 140 pages, illustrated (colored plates). 1939. Price 40¢